IOWA URBAN AND COMMUNITY FORESTRY COUNCIL

Community Trees

Winter 2003 *Volume 14, Issue 3*

The best time to plant a tree was twenty years ago. The second best time is now.

Take Advantage of Winter: The Best Time to Prune Young Landscape Trees

By Chris Feeley, ISU Forestry Extension

Landscape trees need proper care throughout their lives, and one of the most important tree management practices is pruning. Pruning is more than just indiscriminately removing branches. When done properly (Figure 1), pruning can improve the health and structure of the tree. Proper pruning includes knowing which branch to remove, when to do it, and how to minimize damage to the tree.

Figure 1. A properly pruned branch.

The main reason to prune young trees is to develop a good branch structure, and the first 15-20 years of a tree's life is the most critical time to prune to achieve this goal. The best time to prune is in mid to late winter (January-March). Pruning during this time of the year allows the tree to have a full growing season to seal the wound.

If pruning must be done at other times of the year, avoid pruning during the spring from bud break through leaf expansion and during the leaf color season in the fall. Pruning during those times may reduce the vigor of a tree. Oak is a species where timing of pruning is critical. The pathogen that causes the disease *Oak Wilt* can be transmitted through open wounds by a small, sap-feeding beetle. For this reason, avoid pruning oaks from March 15th through the end of August.

Limit pruning of newly planted trees to the removal of dead and broken branches or the correction of multiple leaders. Leave the temporary lower branches on the tree until they reach 1 inch in diameter to increase trunk growth and root development. Concentrate efforts on removing crossing, rubbing, broken, diseased, and weak-angled branches in the upper portion of the tree.

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Inside

President's Message

It has been a pleasure to see urban forestry activities in Iowa grow and prosper. Many of us have been members of the Iowa Arborist Association (IAA) or participants in their sponsored programs and workshops. In recent years the Board of Directors of the IAA has done an excellent job of providing learning opportunities from top-notch presenters while keeping the registration costs at a reasonable level.

This last October, IAA took this one step further. Not only did they provide a great workshop for their members to learn more about planting trees in inner city business districts, but they made a concerted effort to include Landscape Architects. The turnout by Landscape Architects was great, and comprised about two thirds of the almost 90 people in attendance.

The highlight of the workshop was Jim Urban (FASLA, Metropolitan Washington, D.C.), whose studies have resulted in the development of new standards for tree planting/site preparation on urban sites. Urban provided some great insight into planting trees in a harsh concrete environment. He cited examples of the many award winning designs that have been less than workable from the plant's perspective. He made the point that we should not just judge a project on design, but on its longevity. How can the project be considered successful if the plants, including trees, can not survive over time?

Congratulations to the IAA! Foresters and Landscape Architects working together - I hope the concept continues to grow. We can learn a lot from each other.

Keith Majors

Pruning, continued from page 1

Also, eliminate double leaders and basal sprouts. Remember, pruning is an ongoing process throughout a tree's life.

Before making a pruning cut, identify the *branch bark ridge* and *branch collar*. The branch bark ridge is simply where the branch and trunk meet. The branch collar is the swollen area just under the branch, as shown in Figure 2. When removing a branch, use the three-cut method. The initial cut is made on the underside of the branch 6-12 inches from the trunk and about a third of the way through the stem. The second cut is made through the stem about 1 inch outside the initial cut. The second cut removes the weight of the branch preventing tearing. The last cut is made outside the branch collar.

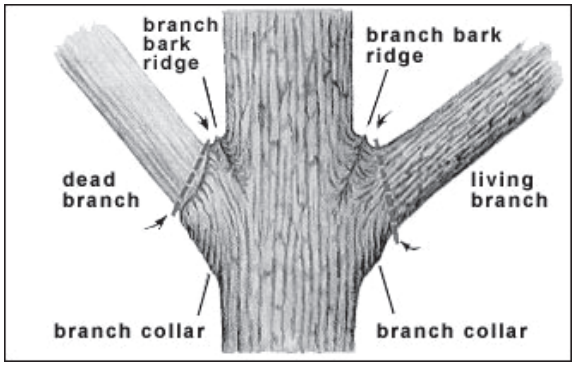

Figure 2. Diagram showing the branch bark ridge and branch collar. Courtesy of the US Forest Service publication "How to Prune Trees", NA-FR-01-95.

Proper pruning will help enable young landscape trees to survive and thrive. For more information on pruning, consider reading Iowa State University Extension Publication SUL-5 "Pruning Trees and Shrubs".

Forest Health Update

By Steve Pennington, Iowa DNR Forest Health Coordinator

The Iowa Department of Natural Resources' Bureau of Forestry has always operated a forest health program. The program keeps track of forest stressors (insects, diseases, invasive species) by utilizing the Bureau's field foresters, USDA grants, and day-to-day contact with professionals in related fields throughout the state and the Midwest. The program helps the Bureau in assisting Iowa's rural and urban forest owners and operators in managing these forest stressors.

A primary means of interacting with others who can assist with forest health is through the Bureau's *Iowa Forest Insect and Disease Management Council* (IFIDMC). This twenty-four person council is composed of entomologists, pathologists, foresters, arborists and others willing to advise and assist the Bureau with its forest health program. The IFIDMC meets twice annually (Autumn and Winter).

Regarding the gypsy moth, 159 moths have been caught this season (as of November 3) in 3800 traps across the state. This was a significant increase from 2002 (35 moths), with the most noticeable increase occurring in the NE/E Iowa counties of Allamakee, Clayton, Dubuque, and Scott. Even though the gypsy moth has not yet generally infested Iowa, these trap numbers indicate an infestation is getting closer.

IFIDMC members responded by stepping up the effort to rewrite Iowa's gypsy moth position paper, in order to recommend additional steps to counter the moth when/as it arrives. Also, the IFIDMC plans to publish a one-page "executive summary" of the gypsy moth situation that may be shared with legislators and other state and local leaders who may fund and support programs to manage the moth. In 2004, Council plans include increasing awareness of specific steps needed in the future management of gypsy moths.

The IFIDMC meeting included a report on forest insects in other states. Emerald ash borer (an Asian beetle) is lethal to ash species and is now documented in MD, VA, and OH, in addition to MI, where 13 counties are quarantined. Asian longhorned beetle, conversely, is being reported as an entomological success story because in the initial outbreak areas in Chicago, no new trap catches are occurring, suggesting complete eradication. The Banded elm bark beetle is a new insect trapped so far in Colorado, Utah and Kansas. It is being watched and discussions are occurring on whether or not it will have a significant impact on our remaining elms.

In addition to managing forest stressors, another function of the Bureau and the IFIDMC is the annual Iowa Forest Health Tour. This two-day field event consists of individuals involved with rural and urban forests traveling around the state visiting and evaluating sites where stressors have affected forest health. The tour presents an opportunity for on-site experience for participants, and a sharing of ideas regarding forest health. Individuals who may want to participate and are interested in being on the tour mailing list should send an email to steve.pennington@dnr.state.ia.us. The 2004 tour will take place July 13 & 14 in S. central Iowa, with stops (tentative) to include viewing oak wilt sites and oak export insect and disease issues, Christmas trees, prescribed burn areas, state forests, and urban forests.

For more information, please visit www.iowadnr.com/forestry/health or www.forestry.iastate.edu/ext/ext.

The Technical Corner

The Tree Underground

By Paul Wray, ISU Forestry Extension

Trees are an important part of our environment in Iowa communities, in the urban forest, and in our 2.5 million acres of natural woodlands. Tree size ranges from a few feet in height and width to more than 100 feet tall and wide for the largest tree in Iowa. Tree tops are visible and appreciated; tree roots are not visible, usually misunderstood, and certainly not appreciated very much. The root system of woody plants is essential for their survival and growth. Often, the general decline of a woody plant is directly related to the health and vigor of its root system.

The roots of young seedling trees are often classified as either having a tap root (most oaks, walnut, hickory) or having a fibrous root system (maples, ash, cottonwood). The tap root may grow vertically for some considerable distance if soil conditions are favorable. As the root system continues to enlarge with tree growth, the root type becomes less recognizable. Below ground, environmental factors including moisture, oxygen supply, soil texture, below ground obstacles, other roots, and animals determine the ultimate shape and extension of the tree's root system.

Healthy trees have extensive root systems. Most tree roots are shallow; the majority of roots are found in the top 18 inches of soil. Usually, more than 50 percent of a tree's roots are in the top six inches of soil. Most favorable growing conditions are in the upper profile of soil; moisture and nutrients are first available near the surface in the water and nutrient cycles. Roots extend laterally for considerable distances, as shown in Figure 1. Root systems may occupy an area four to seven times the surface area occupied by the crown of the tree.

Root systems are modified by their environment. Soils with higher clay content have less extensive roots than soils which are sandy or better drained. Trees growing in mulches or in a "natural" woodland environment will have more roots closer to the surface than trees growing in turfgrass environments. Roots growing in fertile, moist and well aerated soils will be more numerous, less extensive and closer to the trunk than roots in less desirable soil. Roots in sandy soils will be more extensive, less fibrous and fewer in number.

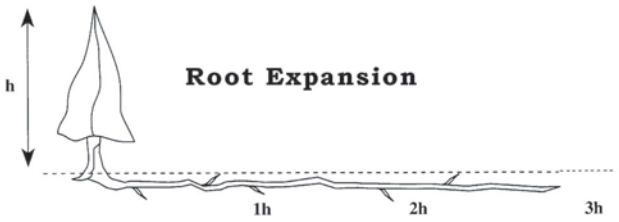

Figure 1. Lateral root expansion can be extensive.

For trees to function at their optimum, as the above ground portion of the tree grows and expands, so must the root system. The relative relationship of the root to the shoot is expressed as the ratio of the weight of the root to the weight of the top. Under normal conditions, this ratio is from 1/5 to 1/6, meaning that the top is 5 to 6 times as heavy as the roots. Another way to view the root system is to consider that a seedling may have 2 to 6 feet of root length while the root system of a mature oak tree may be hundreds of miles in length.

At the point of attachment to the trunk of the tree, there are relatively few roots; these divide and redivide, becoming progressively smaller in diameter until reaching the extremely fine rootlets. Roots have no regular branching pattern like the shoots, which develop at nodes from buds in the axils of leaves. Lateral roots arise from tissue on the outside of larger roots. The root cap protects each root tip as it is forced through the soil by elongating tissue just behind the tip of the root. Just back from the root tip are the root hairs, which are fine outgrowths of single cells.

Water and nutrients are absorbed through root hairs and by the tips of these smallest roots. Root hairs are functional for a few weeks to two years and then are sloughed off.

Most tree species are infected with mycorrhizae. Mycorrhizae are specific fungi which form a symbiotic relationship with a tree. These fungi receive their nutrition from the host plant to complete their life cycle and aid the host plant by increasing the efficiency of the tree's root system. There are more than 2500 different fungi which may form mycorrhizal relationships with trees; often there are several different fungi associated with an individual tree.

Trees can share root systems. If two roots of the same species grow next to each other, as they grow in diameter, they may grow or graft together. This has implications when trees growing next to each other are infected with vascular diseases which may be transmitted through root grafts.

Healthy trees will have a healthy, expanding root system. As we work with landscape plants, avoid practices which will damage or inhibit the growth of a tree's root system. Healthy roots anchor the tree, provide uptake of nutrients and water for growth and cooling, provide storage for food reserves, and produce organic materials required for tree growth. These root functions are vital to a vigorous and functional tree. For more information about roots, please visit www.forestry.iastate.edu/ext/roots.html.

New Oak Wilt Learning Tool Available

By Linda Haugen, Plant Pathologist, USDA Forest Service

"Oak Wilt: People and Trees, a Community Approach to Management" is a new training tool on CD-ROM. This self-paced short course was designed as a learning tool for urban and community foresters, city administrators, tree inspectors, parks and recreation staff, and others involved in oak wilt management.

On the CD you will find:

- Three PowerPoint slide shows: **Oak Wilt** (the main presentation; presents background, symptoms, management options), **Management Scenarios** (demonstrates how prescriptions are developed for specific situations), and **Oak Wilt Look-A-Likes** (describes problems often confused with oak wilt disease),
- An oak wilt image collection, which you can use to develop your own talks,
- Printable electronic oak wilt publications written by leading disease experts,
- Resources for further assistance and information (including a list of other sources of information, a list of labs that process samples, and additional information on handling diseased wood), and
- All software needed for viewing slideshows, documents, and other files on the CD.

The CD is available at no charge, as a technology transfer product from the North Central Research Station and the Northeastern Area, State and Private Forestry, of the USDA Forest Service. Copies of the 2003 version can be requested now from Donna King at USDA Forest Service, S&PF, 1992 Folwell Avenue, St. Paul, MN 55108; or phone (651) 649-5262. They can also be ordered through the North Central Research Station's website at: http://ncrs.fs.fed.us/pubs/products/oakwiltorder.asp. A 2004 revision will be available in March 2004 through the same sources.

Questions, comments or suggestions about this CD publication can be shared with Linda Haugen (lhaugen@fs.fed.us, phone (651) 649-5029) or Dr. Jennifer Juzwik (jjuzwik@fs.fed.us, phone (651) 649-5114).

Community Profile

By Matt Edwards
former DNR Volunteer Specialist

Boone

Strong, dedicated leadership is one of the most important elements of any community forestry program. A prime example is the Johnny Appleseed group in Boone. The group was started in 1984 in response to a major highway construction project and was the vision of Dr. John Murphy. Since that time, his continued dedication and leadership has produced a highly effective yet informal program for Boone and its residents. The group's accolades have included countless grants (channeled through the City) and yearly re-certification as a Tree City USA Growth Community.

The Johnny Appleseed group officially does not exist. There is no board, no membership, no charter, and no 501 (c) 3 status. Instead, the group consists of a running database of volunteers who have participated and continue to participate in community forestry programs and activities in town. For a time there was a city-sanctioned tree board, which was an offshoot of the group, but in 1990 its responsibilities were absorbed by the parks department. This lack of formal structure, however, has not restricted the development of community forestry in Boone.

Volunteers from the Johnny Appleseed group during the Arbor Day Celebration in Boone.

Each year the group sponsors at least two major events. There is a residential tree distribution day in the spring, and a community pruning day in the fall. Each time an event is planned, Dr. Murphy simply contacts past participants via mail and invites them to again lend a hand for their community. From there, he depends largely on word of mouth to recruit new participants. According to Murphy, for the planting projects "there is an 80 percent return on volunteers." The careful tracking of participants at each event, personal invitations, and the thank-you letter sent to volunteers all contribute to the consistent success of these events. After twenty years, the seemingly disjointed group has managed to plant 7,200 trees and is now shifting its focus toward the long-term care and maintenance of the trees that have been installed on city property.

Murphy works closely with the local park board to determine the planting locations and tree needs of the city. Beyond that, his efforts to organize and coordinate events and to solicit funds from community residents and businesses are a personal passion. After two decades, he continues to coordinate planning efforts, muster volunteers, and help to raise matching funds for grants. He derives satisfaction from knowing that what he is doing is making a difference in the lives of Boone residents. According to Murphy, "most of the kids that participate in the program go on, or move away from the area. But 50 years from now, they'll think back and remember what they've done." Today, it is clear that the leadership John Murphy provides and the enthusiasm of community volunteers has helped to foster an active community forestry program that has continued to contribute to the quality of life in Boone today and in the future.

In a Nutshell

Tree City USA Applications

The application deadline for the 2003 Tree City USA award has been extended to January 31, 2004. The program is a great way to provide recognition for your community's hard work in promoting trees. The awards will be presented on April 1, 2004, at a luncheon in which Iowa's Governor is often the keynote speaker. Applications can be found on www.iowadnr.com/forestry/ and should be returned to Randy Cook, Forestry Bureau/ Iowa DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034. For more information or to see if your community will qualify, contact Randy Cook (515-281-5600, Randy.Cook@dnr.state.ia.us).

IUCFC Awards Nominations Due February 16

Nominations for the Iowa Urban Forestry awards are due on February 16, 2004. The Council encourages you to help in rewarding a worthy Iowan for his/her hard work. Awards will be presented at the April 1 luncheon. Please contact Randy Cook with any questions or for a form (included in the last newsletter) at 515-281-5600 or Randy.Cook@dnr.state.ia.us.

Fifth Grade Poster Contest

"Trees are Terrific...in Cities and Towns!" is the theme for the 2004 Arbor Day National Poster Contest, sponsored by the National Arbor Day Foundation and Toyota. Iowa's winning poster will compete in the national competition. An Activity Guide will be mailed to 5th grade art teachers in January. The deadline for submitting posters is March 17. For more information or to request an Activity Guide, please contact Matt Brewer (515-242-6892, Matt.Brewer@dnr.state.ia.us).

NOTE: *This newsletter can be found online at either of two websites: www.forestry.iastate.edu/iucfc/ OR www.iowadnr.com/forestry/.*

Calendar of Events

January 14
Council Meeting
Ames
randy.cook@dnr.state.ia.us

February 5
Iowa Arborists Association Workshop
Granger
john.walkowiak@dnr.state.ia.us

March 9-10
48th Annual Shade Tree Short Course
Ames
iles@iastate.edu

March 13
Forest Stewardship Conference (NE Iowa)
Sinsinawa, WI
phw@iastate.edu

March 27
Forest Stewardship Conference (SE Iowa)
Keokuk
phw@iastate.edu

April 1
IUCFC Awards Luncheon
Des Moines
randy.cook@dnr.state.ia.us

Iowa Urban and Community Forestry Council members:

Mark Masteller, IADOT
Don Brazelton, Iowa Assn CCB
Shannon Ramsay, Trees Forever
Patty Peterson, Trees Forever
Paul Wray, ISU Forestry Extension
Jan Thompson, ISU NREM
Jeff Iles, ISU Horticulture
Chris Feeley, ISU Forestry Extension
Mark Vitosh, IADNR
Jim Mason, Country Landscapes
Rick Tagtow, NICC
Keith Majors, Davenport

IOWA URBAN AND COMMUNITY FORESTRY COUNCIL

IUCFC
C/O Iowa DNR Forestry
502 East 9th Street, 4th Floor
Des Moines, IA 50319
515-242-6892
matt.brewer@dnr.state.ia.us

John Batt, Council Bluffs
Lisa Burban, USDA Forest Service
Mike Brandrup, IADNR
John Walkowiak, IADNR
Randy Cook, IADNR
Mike Guidici, Greenway Habitat
Terry Robinson, Iowa City
Mike Bevins, IADALS
Stephen Goltry, ASLA
Daniel Kalbach, Oskaloosa
Deb Ryan, Conservation Districts
Connie Maxwell, Johnston

IOWA URBAN AND COMMUNITY FORESTRY COUNCIL

Iowa DNR, Forestry
502 East 9th Street
Fourth Floor, Wallace Building
Des Moines, IA 50319
515-242-6892

We have fallen heirs to the most glorious heritage a people ever received, and each one must do his part if we wish to show that the nation is worthy of its good fortune.

Theodore Roosevelt